- Be sure to read this User's Manual before starting the operation of the receiver.
- Never open the cover. It is dangerous to touch the inside of the receiver due to possible electric hazard.
- When the receiver is unused for a long time, unplug the power cord from the wall outlet.
- Do not use a damaged power cord that may cause a fire or an electric shock.
- Do not touch a power cord with wet hand. It may cause an electric shock.
- Place the receiver in well ventilated and no-heat environment.
- When connecting cables, the receiver must have been powered off.
- Do not plug in/out CI module, when the receiver is powered on. But you can insert smart card to CI module with powered on.
- Do not stack the exposed firing device, such as candle, on top of the receiver.
- Do not expose the receiver to dripping or splashing and that no objects filled with liquids, such as base, shall be placed on the apparatus.

How to Use This Manual
This manual provides complete instructions for installing and using this receiver.
The following symbols will serve as follow.

Warning	Indicates a warning information.
Tips	Indicates any other additional important or helpful information.
MENU (Bold Character)	Represents a button on the remote controller or the receiver.
Move to (Italic Character)	Represents a menu item within a window.

Common Part

- Easy Graphic MENU Interface
- RS232C Port for Updating Control Software and Additional Service
- Video Connector(RCA, SCART)
- Multi-Language Function(Menu,Audio)
- OSD : Transparency & Blending, 256 Palette Colors
- Front Panel Buttons & IR Remote Controller User Interface
- Editing Functions(TV or Radio Channel, Channel Name and Favorite List)
- EPG for On Screen Channel Information
- 3 Operation Modes(Digital TV, Digital Radio, Favorite)
- PLL RF Modulator UHF21-69 with PAL-B/G, D/K,I(optional)
- Digital Audio output(S/PDIF by Coaxial)

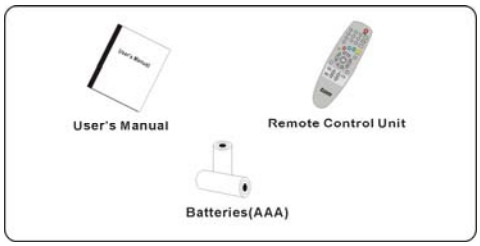
Digital Part

- Receives QAM Cable RF Signal and Decodes the Digitally Encoded Signal
- Digital Tuner with Loop-through out
- SCPC/MCPC Receivable from Cable.
- MPEG-2 Main Profile at Main Level
- Teletext Supported Through VBI & OSD
- Over 3000 Channels Memory

Viaccess Embeded

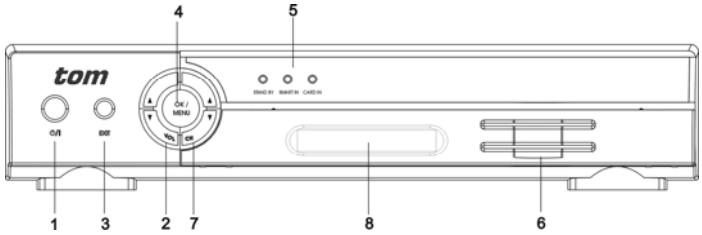
- 1 Slot Smart Card

1.1 Accessories



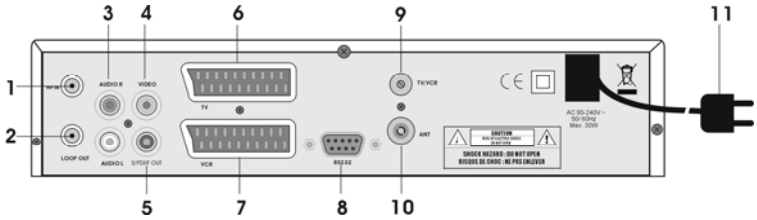
Warning Please don't recharge, disassemble, electric short, and mix with used or other battery types

2.1 Front Panel



1. Power Button
Turns the receiver On/Off.
2. Volume UP/DOWN Button
Increases/decreases the volume levels in No-menu state. Change the setting values in specific Menu item.
3. Exit Button
Exits from the current menu or cancels the current progressing operation if applicable.
4. OK/Menu Button
Shows the System set-up menu in No-menu state. Activates the highlighted menu item in Menu state.
5. Display(4-digits 7-segments/3LED)
The 4-digit displays channel information. In STAND BY mode, the 7-segment displays local time.
The red LED is the STAND BY indicator and the one yellow LED is the CAM in indicator.**(CI Model Only)**, the other green LED is the Card in indicator. (Viaccess)
6. SMART CARD SLOT
Insert smart card into smart card slot for conditional access.
7. Channel UP/DOWN Button
Moves the cursor up/down in Menu state. Changes the current program to the next/previous program in No-menu state.
8. CI Slot
Insert CI module into CI slot for conditional access.

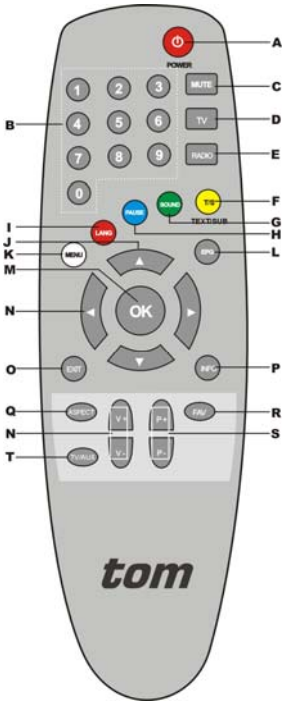
2.2 Rear Panel



1. RF IN
Connect the digital signal from your Cable to this connector.
2. LOOP OUT
Gives you the possibility to connect an extra digital receiver.
3. AUDIO Right(Red RCA) and Left(White RCA)
These connectors give you the possibility to connect the audio signal to an external amplifier, or the audio input of your TV.
4. VIDEO(Yellow RCA)
This connector has a constant video signal for additional VCR-connections.
5. S/PDIF
Output for connection to a digital audio amplifier.
6. TV Scart Connector
Use this connector to connect your receiver to your TV using a scart cable.
7. VCR Scart Connector
Use this connector to connect your receiver to your video recorder using a scart cable.
Your video signal will now be looped through to you TV.
8. RS232 Serial Port
This serial port can be used to connect your PC to your receiver, and enables you to download new programs into your receiver.
9. TV/VCR
RF Modulator(male part). If you do not use a scart cable or RCA cable to connect your receiver to your TV, you will have to use this connector to connect the receiver to your TV, using a coax cable. If you connect your receiver to your TV like this, be sure that you set your TV to the Video channel.
10. ANT
RF Modulator(female part). If you have an additional antenna(cable or terrestrial) as well, and you do not use a scart cable to connect the receiver to the TV, then your additional antenna has to be connected here. If you use a scart cable to connect the receiver to your TV, the additional antenna can be put directly into your TV.
11. Power Cord
Your receiver requires a current of 90~260V AC(Auto-selectable), 50~60Hz+/-5%.
Make sure to check the power specification before connecting your receiver to the wall outlet.

2.3 Remote Control Unit

All features of the set-top box can be controlled with the remote



A. POWER
Turns the receiver On/Off.

B. NUMERIC KEY(0-9)
Controls the numerical operation and especially changes program directly.

C. MUTE
Mutes audio output of the receiver.

D. TV
Shows the current digital TV program list.

E. RADIO
Shows the current digital Radio program list.

F. TEXT/SUB
Shows Teletext, if available

G. SOUND
Selects sound mode to stereo or mono.

H. PAUSE
Pause the video/audio output.

I. LANG
Shows the list of the audio language and subtitle languages available in the current channel.

J. UP/DOWN
Changes the current program to the next/previous program in NO-menu state.
Moves the cursor to upward/downward in Menu state.

K. MENU
Shows the menu or sub-menu and cancels the processing function if applicable.

L. EPG
View the program guide in No-menu state.

M. OK
Activates the highlighted menu item.
Display channel list according to TV/Radio Mode

N. LEFT/RIGHT
Increases/decreases the volume level in No-menu state.
Changes the setting value in specific Menu item.

O. EXIT
Exits from the menu or sub-menu and cancels the progressing function if applicable.

P. INFO
Used for special function. Normally used for viewing channel information.

Q. ASPECT
Changes aspect ratio of viewed channel.

R. FAV
Shows the current favorite program list.

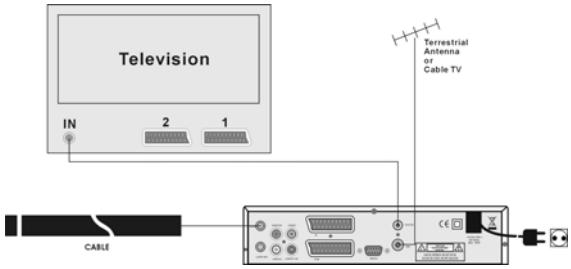
S. P+/P-
Page up and down in menu list.

T. TV/AUX
Control RF modulator output to receiver output or ANT input of RF modulator.
Whenever TV/AUX button is pressed here fore modulator output(TV/VCR) is changed to receiver video/audio output or bypass ANT input signal.

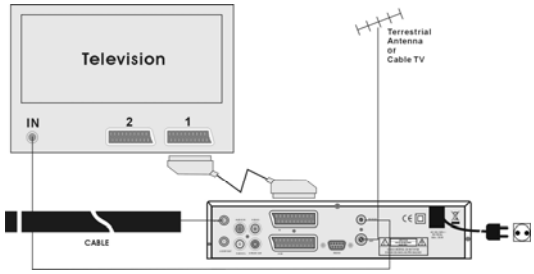
3.1 Connecting to TV & VCR

Basic connection with a coax cable

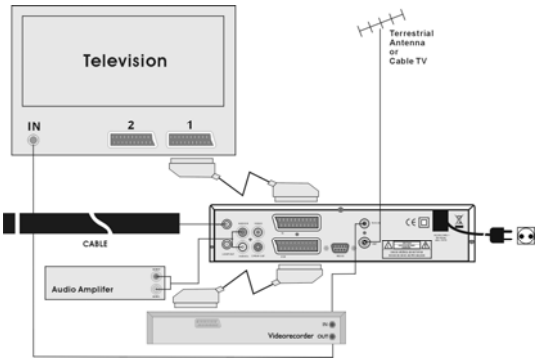
1. Connect the cable signal to the QAM RF IN Connector.
2. Connect the TV/VCR connector at the back of the receiver to the coax IN connector on your TV set.
3. Optional : connect an extra terrestrial or cable antenna to the ANT connector at the back of the receiver.



Basic connection with a Scart cable
1. Connect the cable signal to the QAM RF IN Connector.
2. Connect the TV scart connector at the back of the receiver to the scart-in connector on your TV set.
3. Optional: connect an extra terrestrial or cable antenna to the ANT connect at the back of the receiver.

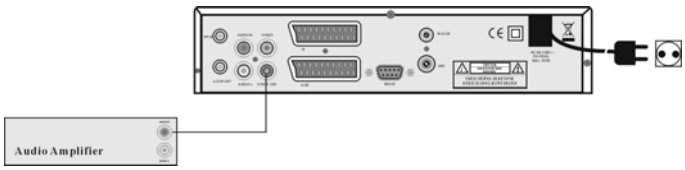


Advanced connection of the receiver to the TV set, VCR and Audio amplifier
1. Connect the cable signal to the QAM RF IN Connector.
2. Connect the TV scart connector at the back of the receiver to the scart-in connector on your TV set.
3. Connect the VCR scart connector at the back of the receiver to the scart-in connect on your VCR set.
4. Connect an extra terrestrial or cable antenna to the ANT connector at the back of the receiver.
5. Connect a coax cable to the TV/VCR connector at the back of the receiver.
Connect the other end of this coax cable to the coax-in connector of your VCR.
6. Connect the coax-out connector of your VCR to the video-in connector of your TV set with a coax cable.
7. Optional: Connect the audio left and right RCA-plugs(Red and White) on the back of your receiver to the left and right input of an Audio amplifier, so you can enjoy the digital quality of the sound that is produced by your receiver.



Receiver to Audio amplifier with S/PDIF OUT

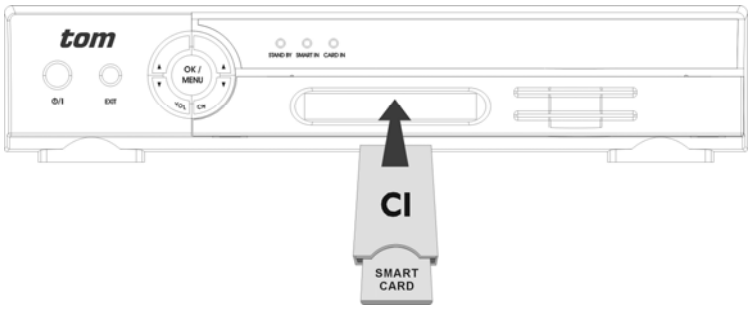
Connect the Audio amplifier to S/PDIF OUT.



3.2 Connecting to CI Module

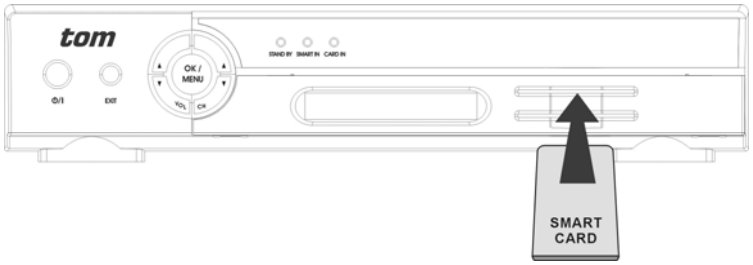
Insert CI module into CI slot for watching TV program from Service Provider.

Warning Do not plug in/out CI module when the receiver is powered on.
But you can insert smart card to CI module with power on.



3.3 Connecting to SMART CARD

Insert Smart Card into Smart Card slot for watching TV program from Service Provider.



4.1 Before Settings

Starting up for the First Time

1. Turn on your TV and receiver.
2. If it is first time using a receiver, you should set parameters for system configuration.
After displaying the login screen, press the MENU button.
The <Screen1> will be appeared.

screen 1

Menu Information

The menu consists of main-menu and sub-menu, as you see in the <Screen 1>.
Main-menu has items and each main-item has its sub-menu items.

4.2 Basic Settings

CH Configuration

This menu <Screen2> is used to check the initial setting status and to adjust the channel.
Select Installation in Main Menu and press the OK key to show the screen of this menu.

1. Scan: press the Red button to search for programs of the channels preset.
2. All Scan: press the Blue button to search for programs of all the channels.
3. Insert: press the Green button to show the menu which allows the user to Add the channel information.
4. Modify: press the Yellow button to show the menu which allows the user to Modify the channel information.

screen 2

Press the Green button to show <Screen 3> where the present channel can be Insert with OK button pressed.

screen 3

Press the Yellow button to show <Screen 4> where each item can be modified and input.
Use the OK button to change CH NUM.
After input is completed, press OK button to save the set channel modified.

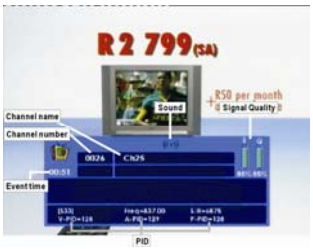
screen 4

Auto Scan

Press the Blue button on <Screen 2> to search for programs of all the channels set presently.
Then <Screen 5> will be displayed to search for programs of all the channels as set.

screen 5

4.3 TV menu at the normal mode(No menu state)



screen 6

At normal mode, various menus are displayed on the screen with remote control action. You can change the current status and mode with various buttons including the Up/Down, INFO and EPG button. <Screen 6> shows the banner displayed when you press the INFO button. If you press the button again before the banner disappear, detail banner is displayed.
The detail banner shows detailed information on the current channel.

- **MUTE :** Mutes the current channel audio.
- **POWER** : Turns the receiver power on/off.
- **SOUND :** Sets the current channel audio to stereo/left-mono/right-mono.
- **TV/RADIO :** Changes the current mode. If you press the Radio button at TV mode, the system changes into the Radio mode, and if you press the TV button at Radio mode, the system changes into the TV mode. And if you press the TV button at the TV mode, or the Radio button at the Radio mode, the TV/Radio list menus are displayed.(The menus are the same as those of Channel Manager, but are not available to edit.
  To edit, use the Channel Manager of the Main menu.)
- **Numeric Key(0-9) :** You can change channel by inputting channel number directly.
- **Up/Down :** Moves to the previous/next channel.
- **Left/Right :** Adjusts volume.
- **LANG :** Shows the list of the audio language and subtitle available in the current channel.(The selected audio language information is saved and applied when you watch the channel.)
- **FAV :** The Favorite List is displayed.
- **MENU :** You can enter the Main Menu.
- **OK :** Program list is displayed according to TV/Radio Mode.
- **EXIT :** No function in No-menu state.
- **EPG :** The EPG menu of the current CH is displayed.
- **TEXT :** Show the TXT of the current channel supports.
- **PAUSE :** Pause the video/audio output of receiver, to clear pause press PAUSE button again.
- **INFO :** Press the INFO button once to display short and extended information. If you press the button again before the banner disappears, a new banner will be displayed showing the details of the current channel.

Tips

TV/Radio/Favorite List is classified into the Simple mode and the Edit mode. If you press TV/Radio/Fav at Normal, the Simple mode menu is displayed. The simple mode provides fast channel move and fast display of basic information, but does not provide the Edit function. If you want to edit, select Channels Manager and Favorites Manager of Main Menu. The TV/Radio/Favorite menu displayed in this section is the Simple mode. To use edit function, see 4.5 Channel Manager and 4.7 Favorites Manager.

TV/Radio List in Simple mode

If you press TV/RADIO/OK on the remote controller, at No menu state, the screen is displayed as follows.
You can preview the channel and move the channel fast with the P+/P- button.

screen 7

Favorite List in Simple mode

If you press FAV on the remote controller at No menu state, the screen is displayed as follows.
You can preview the channel and move the channel fast with the P+/P- button.

screen 8

Program Guide

If you want to view program guide information, Press EPG on viewing TV screen <Screen 6>.

screen 9

Press OK to see the selected channel.
Use left or right key to show next/previous event on the program guide.

4.4 Channel Manager

You can change channel information in the "Channel Manager" of Main Menu.
Use TV/Radio button to view TV/Radio channel list.

Channel Edit

Modify channel information in current list.

1. Skip button(RED) : Skip the program when you change current channel.
2. Lock button(BLUE) : Control watching the program.
3. Delete button(GREEN) : Deletes the channel from the current list.
4. Move button(YELLOW) : Change display order in the current list.

Screen 10

LOCK

If channel lock status is enabled, you must enter PIN code to view channel.

Screen 11

SKIP

If channel skip status is enabled, channel cannot be viewed on a channel view operation.

Screen 12

4.5 Add Favorites

You can designate the channels of the current TV/Radio list as the favorite channels.

The default favorite list names are "fav 1~fav 4".
Move to the required channel with Up/Down or P+/P- button, and then press color button on the remote controller to set channel as favorites.
For example, if you press Red(fav 1) button the channel is designated as 'fav 1' favorite channel. If Red button is pressed again the selected channel is un-selected from "fav 1" favorite list. One channel can be selected into more than one favorite list.
You can change default favorite list name from Favorite Manager menu.
To select Radio channel in the TV list use Radio button, and use TV button in the Radio channel list. You can see the favorite list if you press the 'Fav' button while you are watching TV(or listening Radio channel) in Normal State.

Screen 13

4.6 Channel Sort

You can sort channel orders of channel list.

This gives you the opportunity to sort your program list by channel name, free or coded channel and channel.

Screen 14

Reset Channel

You want to delete Scan Channels.
Press the OK button in the Reset channel menu of Channel Organize.

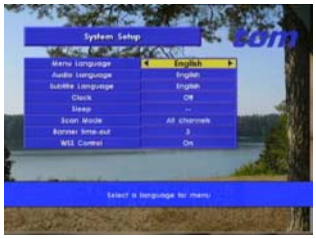
Screen 15

4.7 Other Settings

The Preference menu has following 6 sub-menu.
- System Setup
- TV Output Setup
- Timer Setup
- System Information
- Time Setup
- Factory Reset

System Setup

- Menu Language : Select OSD menu language for your convenience.
- Audio Language : Select Audio language for your convenience.
- Subtitle Language : Select Subtitle language for your convenience.
- Clock : Switch clock on/off in normal viewing mode.
- Sleep : You can preconstruct sleep time.
- Scan Mode : You can see the coded only channel, all channel, free only channel item of Scan Mode.
- Banner Time-Out : You can set automatic banner off time.
- WSS Control : You can select On if you want to use Wide Screen Signal



Screen 16

TV Output Setup

You can set the various video output format.

Aspect : You can select TV type you have.
Screen Mode : You can select Pan Scan or Letter Box picture format.
RF TV Mode : You can select a video format of RF modulator.
UHF : You can select UHF Output Channel.
SVHS/RGB/CVBS : You can select SVHS, RGB or CVBS color mode.
Transparency : You can regulate Transparency(0-10).
Brightness : You can regulate Brightness(0-10).
Contrast : You can regulate Contrast(0-10).
Color : You can regulate Color(0-10).

Screen 17

Timer Setup

You can programming a power on/off interval timer by changing value in Timer mode field. You can set Once/Daily/Weekly in Timer Cycle field and you can set the operation time with Time(and duration) field.
Also you can select a channel to see when a receiver is power on with Channel and Channel Number field.

Screen 18

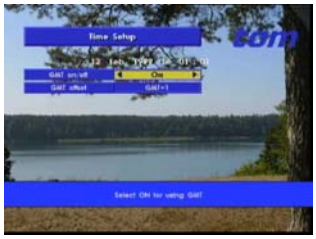
System Information

Shows the system information including the Firmware version and model name.

Screen 19

Time Setup

If a broadcaster provides GMT, you can set the time using GMT, or set your own time by yourself. If the GMT usage is on, Current time is automatically set and you can only set the time zone. If you set GMT Usage to OFF, "Day", "Month", "Year", "Hour" and "minute" are displayed. To set date value move cursor to date item and use right / left button on the remote controller. To set time value move cursor to time item and use numeric button on the remote controller.



Screen 20

Factory Reset

Resets the parameters of the receiver to the factory default setting.

Warning Factory Reset will erase all installed data, use this function carefully.

Screen 21

Parental Lock

Changes the PIN(Personal Identification Number) which is used to control the access to the receiver and also individual channels. If you press the OK button on Parental Lock menu item, the following window will appear, In the window, you are requested to enter Current PIN, New PIN and Retype New PIN for confirmation.

Screen 22

Common Interface

You can navigate the menu, which is provided by CI module.
This information varies a lot depending on the service provider.

Screen 23

Smartcard Information

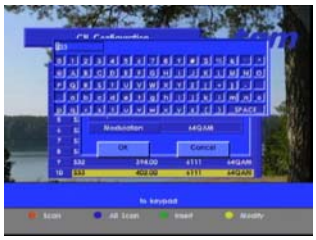
You can navigate the menu, which is provided by Smart Card module.
This information varies a lot depending on the service provider.
CA status displays.
Smart Card EMM/ECM information.

Screen 24

4.8 Name Edit

The name editing is the same for each menu. You can change the Channel names.

Use the Left/Right/Up/Down button to move keypad cursor to the character you wish to input. After you select a character on keypad press OK, then the character in the name box is replaced(or inputted) with the character.
To move character input position of the name box, select ◄ or ► character on the keypad.
If you completed editing move keypad cursor 'OK' key and press OK button.



Screen 25

A.1 Trouble Shooting

There may be various reasons for the abnormal operation of the receiver.
Check the receiver according to the procedures shown below.
If the receiver does not work properly after checking it, please contact the dealer.
Dont's open the receiver cover. It may cause a dangerous situation.

Symptom	Cause	Remedy
The display on front panel does not light up.	The power cord is not plugged in.	Check that the power cord is plugged in to the wall outlet.
No picture or sound	Wrong connection of the Audio/Video output of the receiver to TV. Audio muting. TV power off.	Connect the Audio/Video output of the receiver to TV correctly. Press the MUTE button. Turn TV on.
No picture	The receiver can't receive the signal. Incorrect values of some tuner parameters. Wrong direction of cable	Check the cable, replace the cable, or connect the cable to the receiver tightly. Set the values of tuner parameters correctly in Installation menu. Check the signal strength with a spectrum analyzer and adjust your cable correctly.
The remote controller does not working	The batteries of the remote controller are not inserted or exhausted	Check whether the batteries are inserted correctly in your remote controller Check the batteries, an if exhausted replace the batteries of the remote controller

A.2 Specifications

1. Conditional Access Interface (CI Model Only)

PCMCIA	2 Slot(type I or type II) DVB Common Interface Standard (Viaccess, Irdeto, Nagravision,, Cryptoworks, Aston)

2. Viaccess Embedded

SMART CARD	1 Slot ISO 7816, GSM11.11 and EMV(Payment Systems) Compatibility

3. Tuner & Channel <Digital Part>

Optional Antenna In/Loop-Through	IEC connector Female, Male
Input Frequency Rage	62 MHz to 870MHz
Signal Level range 64QAM 128QAM 256QAM	 -22 to 15 dBmV -18 to 15 dBmV -14 to 15 dBmV
RF Impedance	75 Ohm
QAM Demodulation	4/16/32/64/128/256 QAM
Symbol Rate	7 Msps max.

4. System & Memory

Main Processor	SC2005 F2(LSI-LOGIC)
Flash Memory	2 Mbytes
SDRAM	8 Mbytes
EEPROM	8 Kbyte
Channel Memory	Over 3000
Multi-Language Menu	English/Polish/Spanish/Italian/French/German/Turkish/Arabic/ Russian/
Front	7Keys, 4-digit 7-segment Display
Remote Controller	34Keys, IR Remote Control

5. MPEG Transport Stream & A/V Decoding <Digital Part>

Channel Stream	MPEG-2 ISO/IEC 13818 Stream Specification
Profile Level	MPEG-2 MP@ML
Input Rate	Max. 80Mbit/s
Aspect Ratio	4:3, 16:9
Frame Rate	25Hz for PAL, 30Hz for NTSC
Video Resolution	720 X 576(PAL), 720 X 480(NTSC)
Teletext	Through VBI
Audio Decoding	MPEG/MusiCam Layer I & II
Audio Mode	Single channel/Dual channel Joint Stereo/Stereo
Frequency Response	20Hz~20kHz, <+/-2dB 60Hz~18kHz <+/-0.5dB
Sampling Rate	32, 44.1, 48kHz

6. A/V & Data In/Out

TV Scart Output	SVHS, CVBS, RGB, L, R Output with Volume Control
RCA Output	CVBS, L, R Output(Yellow, White, Red Jack) with Volume Control
S/PDIF	RCA Output(Cinch)
Data Interface	RS-232, Bit Rate:115200baud Connector : 9pin D-Sub Male type

7. RF-Modulator

RF-Connector	75Ω IEC169-2, Male/Female
Frequency	470MHz to 860MHz
Output Channel	CH 21-69 for the Demodulator
TV Standard	PAL B/G, D/K, I Selectable by Menu Setting
Audio Output	Mono with Volume Control
Preset Channel	CH 40(or TBD), Software changeable by Menu screen

8. Power Supply

Input Voltage	AC 90~260V, 50Hz~60Hz
Power Consumption	Max. 30W
Stand-by Power	<= 6.5W
Protection	Separate Internal Fuse The input shall have the lighting protection

9. Physical Specification

Size(WxHxD)	280 X 55 X 240mm Excluding the foot. Foot height is 10mm
Weight	2.5kg

10. Environmental Condition

Operating Temperature	0°C ~40°C
Storage Temperature	-10°C ~ 50°C
Operating Humidity Range	10 ~ 85% RH, Non-condensing
Storage Humidity Range	5 ~ 90% RH, Non-condensing

A.3 Glossary of Terms

PID
Package Identifier.
PIN Code
Personal Identification Number. A four-digit code that is used for locking/unlocking. e.g. with the parental control feature.
RS232
Serial data port.